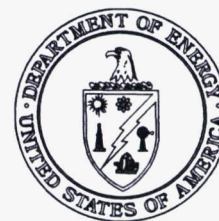


**Department of Energy**

**Ohio Field Office  
Fernald Closure Project  
175 Tri-County Parkway  
Springdale, Ohio 45246**



OCT 4 2006

Mr. James A. Saric, Remedial Project Manager  
United States Environmental Protection Agency  
Region V-SRF-5J  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3590

DOE-0003-07

Mr. Thomas Schneider, Project Manager  
Ohio Environmental Protection Agency  
Southwest District Office  
401 East Fifth Street  
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

**TRANSMITTAL OF REVISED TABLES FOR APPENDIX C OF THE FINAL  
CERTIFICATION REPORT FOR AREA 4B - PART ONE**

Reference: "Certification Report for Area 4B - Part One," Document 20810-RP-0008, dated  
January 2006

Enclosed for your information are replacement tables for certification results presented in Appendix C to the Certification Report for Area 4B - Part One. All hazardous waste management unit tables in Appendix C of the January 2006 Certification Report should be replaced with the enclosed tables, as the incorrect DAF 20 values for aroclor were used in the original calculations. The corrected values (red text) are noted in the replacement tables. The replacement pages contain the proper units and statistics for the noted discrepancies, and there is no change to the conclusion reached in Section 5.2 of the Certification Report (i.e., certification activities for Area 4B - Part One are complete).

If you have any questions or require additional information, please contact me at (513) 648-3139.

Sincerely,

Johnny W. Reising  
Director

Enclosure

Mr. James Saric  
Mr. Thomas Schneider

-2-

DOE-0003-07

cc w/enclosure:

J. Desormeau, DOE-OH/FCP  
T. Schneider, OEPA-Dayton (three copies of enclosure)  
G. Jablonowski, USEPA-V, SRF-5J  
M. Cullerton, Tetra Tech  
M. Shupe, HSI GeoTrans  
S. Helmer, ODH  
AR Coordinator, Fluor Fernald, Inc./MS6

cc w/o enclosure:

J. Chiou, Fluor Fernald, Inc./MS88  
F. Johnston, Fluor Fernald, Inc./MS12  
C. Murphy, Fluor Fernald, Inc./MS1  
T. Terry, Fluor Fernald, Inc./M

**REVISED APPENDIX C**

**HWMUs 04, 18, 28, 46, 47, 49, AND 50 RCRA CALCULATIONS**

# **APPLICATION OF GENERAL CLEANUP NUMBERS**

From Ohio Environmental Protection Agency

Division of Hazardous Waste Management

June 2004

HWMU 04	Carcinogenic (CA)	GCN from Table O-1 mg/kg		Number of COCs (NC vs. CA)	Adjusted GCN mg/kg		Maximum Concentration mg/kg
	Non-Carcinogenic (NC)	1 DAF	20 DAF		1 DAF	20 DAF	
Benzene*	CA	0.00172	0.0343	--			
Tetrachloroethene	CA	0.00398	0.0795	1	0.00398	0.0795	0.042
Aroclor-1254	NC	0.0712	1.424	2	0.0356	0.712	0.0052
Beryllium**	NC	0.0008	0.016	--	--	--	0.459
Toluene	NC	0.276	5.51	2	0.1380	2.76	0.0011

## **Carcinogenic**

$$\text{RISK} = \left\{ \frac{\text{Conc A}}{\text{adj GCN A}} + \frac{\text{Conc B}}{\text{adj GCN B}} + \dots \right\} \times 1.00\text{E-}05 = \text{LIMIT OF } 1.00\text{E-}5$$

20 DAF

$$\text{RISK} = \left[ \frac{\text{Tetrachloroethene}}{0.042}}{0.0795} \right] \times 1.00\text{E-}05 = 5.28\text{E-}06$$

## **Non-Carcinogenic**

$$\text{Hazard Index (1)} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] = \text{LIMIT OF } 1.00$$

20 DAF

$$\text{Hazard Index (1)} = \left[ \frac{\text{Aroclor-1254}}{0.0052}}{0.712} \right] + \left[ \frac{\text{Toluene}}{0.0011}}{2.76} \right] = 0.0077$$

\* Benzene is eliminated based on the frequency of detection, which is less than 5%. (There was no detected concentration of this constituent.)

\*\* Beryllium is eliminated from the COC list because the maximum concentration is less than the site-specific maximum background value of 3.05 mg/kg.

006209

# APPLICATION OF GENERAL CLEANUP NUMBERS

From Ohio Environmental Protection Agency

Division of Hazardous Waste Management

June 2004

HWMU 18	Carcinogenic (CA)	GCN from Table O-1 mg/kg		Number of COCs (NC vs. CA)	Adjusted GCN mg/kg		Maximum Concentration mg/kg
	Non-Carcinogenic (NC)	1 DAF	20 DAF		1 DAF	20 DAF	
Aroclor-1254	NC	0.0712	1.424	2	0.0356	0.712	0.014
Beryllium*	NC	0.0008	0.016	--	--	--	0.487
Lead*	--	--	--	--	--	--	--
2-Butanone (MEK)**	NC	1.18	23.5	--	--	--	--
Xylenes	NC	0.0811	1.62	2	0.0406	0.810	0.001

## Carcinogenic

$$\text{RISK} = \left\{ \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc B}}{\text{adj GCN B}} \right] + \dots \right\} \times 1.00\text{E-}05 = \text{LIMIT OF } 1.00\text{E-}5$$

*No Carcinogenic Constituents*

## Non-Carcinogenic

$$\text{Hazard Index (1)} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] = \text{LIMIT OF } 1.00$$

$$\text{20 DAF Hazard Index (1)} = \left[ \frac{\text{Aroclor-1254}}{0.71} \right] + \left[ \frac{\text{Xylenes}}{0.81} \right] = 0.0209$$

\* Beryllium is eliminated from the COC list because the maximum concentration is less than the site-specific maximum background value of 3.05 mg/kg and Lead does not have a GCN.

\*\* 2-Butanone is eliminated based on the frequency of detection, which is less than 5%. (There was no detected concentration of this constituent.)

1006209

# **APPLICATION OF GENERAL CLEANUP NUMBERS**

From Ohio Environmental Protection Agency  
Division of Hazardous Waste Management  
June 2004

HWMU 28 A	Carcinogenic (CA)	GCN from Table O-1 mg/kg		Number of COCs (NC vs. CA)	Adjusted GCN mg/kg		Maximum Concentration mg/kg
	Non-Carcinogenic (NC)	1 DAF	20 DAF		1 DAF	20 DAF	
Aroclor-1254	NC	0.0712	1.424	1	0.0712	1.424	0.0015
Beryllium*	NC	0.0008	0.016	--	--	--	0.556
Lead*	--	--	--	--	--	--	--
1,1,1-Trichloroethane**	NC	0.106	2.12	--	--	--	--

## Carcinogenic

$$\text{RISK} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc B}}{\text{adj GCN B}} \right] + \dots \times 1.00\text{E-}05 = \text{LIMIT OF } 1.00\text{E-}5$$

*No Carcinogenic Constituents*

## Non-Carcinogenic

$$\text{Hazard Index (1)} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] = \text{LIMIT OF } 1.00$$

$$\text{20 DAF Hazard Index (1)} = \left[ \frac{\text{Aroclor-1254}}{1.424} \right] = 0.0011$$

\* Beryllium is eliminated from the COC list because the maximum concentration is less than the site-specific maximum background value of 3.05 mg/kg and Lead does not have a GCN.

\*\* 1,1,1-Trichloroethane is eliminated based on the frequency of detection, which is less than 5%. (There was no detected concentration of this constituent.)

006209



# **APPLICATION OF GENERAL CLEANUP NUMBERS**

From Ohio Environmental Protection Agency  
Division of Hazardous Waste Management  
June 2004

HWMU 28 B	Carcinogenic (CA)	GCN from Table O-1 mg/kg		Number of COCs (NC vs. CA)	Adjusted GCN mg/kg		Maximum Concentration mg/kg
	Non-Carcinogenic (NC)	1 DAF	20 DAF		1 DAF	20 DAF	
Aroclor-1254	NC	0.0712	1.424	2	0.0356	0.712	0.0014
Beryllium*	NC	0.0008	0.016	--	--	--	0.178
Lead*	--	--	--	--	--	--	--
1,1,1-Trichloroethane	NC	0.106	2.12	2	0.0530	1.060	0.0024

## Carcinogenic

$$RISK = \left\{ \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc B}}{\text{adj GCN B}} \right] + \dots \right\} \times 1.00E-05 = \text{LIMIT OF } 1.00E-5$$

*No Carcinogenic Constituents*

## Non-Carcinogenic

$$\text{Hazard Index (1)} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] = \text{LIMIT OF } 1.00$$

$$20 \text{ DAF} \quad \text{Hazard Index (1)} = \left[ \frac{\overset{\text{Aroclor-1254}}{0.001}}{0.71} \right] + \left[ \frac{\overset{1,1,1\text{-TCA}}{0.0024}}{1.06} \right] = 0.0042$$

\* Beryllium is eliminated from the COC list because the maximum concentration is less than the site-specific maximum background value of 3.05 mg/kg and Lead does not have a GCN.

006209

# APPLICATION OF GENERAL CLEANUP NUMBERS

From Ohio Environmental Protection Agency  
Division of Hazardous Waste Management  
June 2004

HWMU 46	Carcinogenic (CA)	GCN from Table O-1 mg/kg		Number of COCs (NC vs. CA)	Adjusted GCN mg/kg		Maximum Concentration mg/kg
	Non-Carcinogenic (NC)	1 DAF	20 DAF		1 DAF	20 DAF	
Aroclor-1254	NC	0.0712	1.424	1	0.0712	1.424	0.0042
Barium*	NC	0.205	4.09	--	--	--	102
Beryllium*	NC	0.0008	0.016	--	--	--	0.719
Chromium*	NC	0.00696	0.139	--	--	--	19.4
Lead*	--	--	--	--	--	--	--
Mercury**	NC	0.0000949	0.0019	--	--	--	--

## Carcinogenic

$$\text{RISK} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc B}}{\text{adj GCN B}} \right] + \dots \times 1.00\text{E-}05 = \text{LIMIT OF } 1.00\text{E-}5$$

**No Carcinogenic Constituents**

## Non-Carcinogenic

$$\text{Hazard Index (1)} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] = \text{LIMIT OF } 1.00$$

$$\text{20 DAF Hazard Index (1)} = \left[ \frac{\text{Aroclor-1254}}{\frac{0.0042}{1.424}} \right] = 0.0029$$

\* Barium, Beryllium, and Chromium are eliminated from the COC list because the maximum concentrations are less than the site-specific maximum background values (Ba = 261 mg/kg, Be = 3.05 mg/kg, and Total Cr = 27.3 mg/kg). Lead does not have a GCN. Note: Total Chromium was determined but the GCNs listed here are for hexavalent chromium (Cr+6).

\*\* Mercury is eliminated based on the frequency of detection, which is less than 5%. (There was no detected concentration of this constituent.)



# **APPLICATION OF GENERAL CLEANUP NUMBERS**

From Ohio Environmental Protection Agency  
Division of Hazardous Waste Management  
June 2004

<b>HWMU 47</b>	Carcinogenic (CA)	GCN from Table O-1 mg/kg		Number of COCs (NC vs. CA)	Adjusted GCN mg/kg		Maximum Concentration mg/kg
	Non-Carcinogenic (NC)	1 DAF	20 DAF		1 DAF	20 DAF	
Aroclor-1254	NC	0.0712	1.424	1	0.0712	1.424	0.011
Barium*	NC	0.205	4.09	--	--	--	53.2
Beryllium**	NC	0.0008	0.016	--	--	--	--
Chromium*	NC	0.00696	0.139	--	--	--	17.3
Lead*	--	--	--	--	--	--	--
Mercury*	NC	0.0000949	0.0019	--	--	--	0.0168

## **Carcinogenic**

$$\text{RISK} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc B}}{\text{adj GCN B}} \right] + \dots \times 1.00\text{E-}05 = \text{LIMIT OF } 1.00\text{E-}5$$

*No Carcinogenic Constituents*

## **Non-Carcinogenic**

$$\text{Hazard Index (1)} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] = \text{LIMIT OF } 1.00$$

$$\text{20 DAF Hazard Index (1)} = \left[ \frac{\text{Aroclor-1254}}{1.424} \right] = 0.0077$$

• Barium, Chromium, and Mercury are eliminated from the COC list because the maximum concentrations are less than the site-specific maximum background values (Ba = 261 mg/kg, Total Cr = 27.3 mg/kg, and Hg = 0.1 mg/kg). Lead does not have a GCN. Note: Total Chromium was determined but the GCNs listed here are for hexavalent chromium (Cr+6).

\*\* Beryllium is eliminated based on the frequency of detection, which is less than 5%. (There was no detected concentration of this constituent.)

006209

# APPLICATION OF GENERAL CLEANUP NUMBERS

From Ohio Environmental Protection Agency  
Division of Hazardous Waste Management  
June 2004

HWMU 49	Carcinogenic (CA) Non-Carcinogenic (NC)	GCN from Table O-1 mg/kg		Number of COCs (NC vs. CA)	Adjusted GCN mg/kg		Maximum Concentration mg/kg
		1 DAF	20 DAF		1 DAF	20 DAF	
Aroclor-1254	NC	0.0712	1.424	1	0.0712	1.424	0.011
Barium*	NC	0.205	4.09	--	--	--	53.3
Beryllium**	NC	0.0008	0.016	--	--	--	--
Chromium*	NC	0.00696	0.139	--	--	--	19.6
Lead*	--	--	--	--	--	--	--
Mercury*	NC	0.0000949	0.0019	--	--	--	0.0137

## Carcinogenic

$$\text{RISK} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc B}}{\text{adj GCN B}} \right] + \dots \times 1.00\text{E-}05 = \text{LIMIT OF } 1.00\text{E-}5$$

*No Carcinogenic Constituents*

## Non-Carcinogenic

$$\text{Hazard Index (1)} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] = \text{LIMIT OF } 1.00$$

$$\text{20 DAF Hazard Index (1)} = \left[ \frac{\text{Aroclor-1254}}{1.424} \right] = 0.0077$$

\* Barium, Chromium, and Mercury are eliminated from the COC list because the maximum concentrations are less than the site-specific maximum background values (Ba = 261 mg/kg, Total Cr = 27.3 mg/kg, and Hg = 0.1 mg/kg). Lead does not have a GCN. Note: Total Chromium was determined but the GCNs listed here are for hexavalent chromium (Cr+6).

\*\* Beryllium is eliminated based on the frequency of detection, which is less than 5%. (There was no detected concentration of this constituent.)

600900

# APPLICATION OF GENERAL CLEANUP NUMBERS

From Ohio Environmental Protection Agency  
Division of Hazardous Waste Management  
June 2004

HWMU 50	Carcinogenic (CA)	GCN from Table O-1 mg/kg		Number of COCs (NC vs. CA)	Adjusted GCN mg/kg		Maximum Concentration mg/kg
	Non-Carcinogenic (NC)	1 DAF	20 DAF		1 DAF	20 DAF	
Aroclor-1254	NC	0.0712	1.424	1	0.0712	1.424	0.0008
Barium*	NC	0.205	4.09	--	--	--	69.9
Beryllium*	NC	0.0008	0.016	--	--	--	0.423
Chromium*	NC	0.00696	0.139	--	--	--	12.5
Lead*	--	--	--	--	--	--	--
Mercury*	NC	0.0000949	0.0019	--	--	--	0.0139

## Carcinogenic

$$\text{RISK} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc B}}{\text{adj GCN B}} \right] + \dots \times 1.00\text{E-}05 = \text{LIMIT OF } 1.00\text{E-}5$$

*No Carcinogenic Constituents*

## Non-Carcinogenic

$$\text{Hazard Index (1)} = \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] + \left[ \frac{\text{Conc A}}{\text{adj GCN A}} \right] = \text{LIMIT OF } 1.00$$

$$\text{20 DAF Hazard Index (1)} = \left[ \frac{\text{Aroclor-1254 } 0.0008}{1.424} \right] = 0.0006$$

- Barium, Beryllium, Chromium, and Mercury are eliminated from the COC list because the maximum concentrations are less than the site-specific maximum background values (Ba = 261 mg/kg, Be = 3.05 mg/kg, Total Cr = 27.3 mg/kg, and Hg = 0.1 mg/kg). Lead does not have a GCN. Note: Total Chromium was determined but the GCNs listed here are for hexavalent chromium (Cr+6).

606209